

# Material Safety Data Sheet



Clear Image Glass & Surface Cleaner

## 1. Product and company identification

**Product name** : Clear Image Glass & Surface Cleaner  
**Supplier** : Betco Corporation  
1001 Brown Avenue  
Toledo, OH 43607  
www.betco.com  
888-462-3826  
**Synonym** : Not available.  
**Trade name** : Not available.  
**Material uses** : Not available.  
**Manufacturer** : Betco Corporation  
1001 Brown Avenue  
Toledo, Ohio 43607  
www.betco.com  
888-462-3826  
**Code** : 092  
**MSDS #** : 092  
**Validation date** : 6/2/2015.  
**Print date** : 6/2/2015.  
**In case of emergency** : Chemtrec (800) 424-9300  
**Product type** : Aerosol.

## 2. Hazards identification

### Emergency overview

**Physical state** : Liquid. [Compressed gas.]  
**Color** : Clear. Colorless.  
**Odor** : Characteristic.  
**Signal word** : DANGER!  
**Hazard statements** : HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.  
**Precautionary measures** : Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Keep container closed. Use personal protective equipment as required. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Wash thoroughly after handling.  
**Routes of entry** : Dermal contact. Eye contact. Inhalation.  
**Potential acute health effects**  
**Inhalation** : Toxic by inhalation.  
**Ingestion** : Toxic if swallowed.  
**Skin** : Toxic in contact with skin. Moderately irritating to the skin.  
**Eyes** : Severely irritating to eyes. Risk of serious damage to eyes.

### Potential chronic health effects

**Chronic effects** : Contains material that may cause target organ damage, based on animal data.

## 2. Hazards identification

- Carcinogenicity** : Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.
- Target organs** : Contains material which may cause damage to the following organs: blood, kidneys, lungs, the nervous system, the reproductive system, liver, heart, spleen, lymphatic system, upper respiratory tract, skin, bone marrow, central nervous system (CNS), eye, lens or cornea.

### Over-exposure signs/symptoms

- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Ingestion** : Not determined.
- Skin** : Adverse symptoms may include the following:  
irritation  
redness
- Eyes** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Medical conditions aggravated by over-exposure** : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

## 3. Composition/information on ingredients

Name	CAS number	%
2-butoxyethanol	111-76-2	5 - 10
ethanol	64-17-5	1 - 5
propane	74-98-6	1 - 5
butane	106-97-8	1 - 5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

## 4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately. In case of contact with eyes, rinse immediately with plenty of water.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

## 4. First aid measures

- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## 5. Fire-fighting measures

- Flammability of the product** : Extremely flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Not available.
- Special remarks on explosion hazards** : Not available.

## 6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## 7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Empty containers retain product residue and can be hazardous.
- Storage** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

## 8. Exposure controls/personal protection

<u>Occupational exposure limits</u>		TWA (8 hours)			STEL (15 mins)			Ceiling			Notations
Ingredient	List name	ppm	mg/m <sup>3</sup>	Other	ppm	mg/m <sup>3</sup>	Other	ppm	mg/m <sup>3</sup>	Other	
2-butoxyethanol	US ACGIH 4/2014	20	-	-	-	-	-	-	-	-	[3]
	AB 4/2009	20	97	-	-	-	-	-	-	-	
	BC 4/2014	20	-	-	-	-	-	-	-	-	
	ON 1/2013	20	-	-	-	-	-	-	-	-	
	QC 1/2014	20	97	-	-	-	-	-	-	-	
ethanol	US ACGIH 4/2014	-	-	-	1000	-	-	-	-	-	
	AB 4/2009	1000	1880	-	-	-	-	-	-	-	
	BC 4/2014	-	-	-	1000	-	-	-	-	-	
	ON 1/2013	-	-	-	1000	-	-	-	-	-	
	QC 1/2014	1000	1880	-	-	-	-	-	-	-	
propane	AB 4/2009	1000	-	-	-	-	-	-	-	-	
	BC 4/2014	1000	-	-	-	-	-	-	-	-	
	ON 1/2013	1000	-	-	-	-	-	-	-	-	
	QC 1/2014	1000	1800	-	-	-	-	-	-	-	
	US ACGIH 4/2014	-	-	-	1000	-	-	-	-	-	
butane	AB 4/2009	1000	-	-	-	-	-	-	-	-	
	BC 4/2014	600	-	-	750	-	-	-	-	-	
	ON 1/2013	800	-	-	-	-	-	-	-	-	
	QC 1/2014	800	1900	-	-	-	-	-	-	-	

[3]Skin sensitization

**Consult local authorities for acceptable exposure limits.**

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

## 8. Exposure controls/personal protection

<b>Engineering measures</b>	: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
<b>Hygiene measures</b>	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
<b>Personal protection</b>	
<b>Respiratory</b>	: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
<b>Hands</b>	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
<b>Eyes</b>	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Recommended: safety glasses with side-shields
<b>Skin</b>	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
<b>Environmental exposure controls</b>	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
<b>Other protection</b>	: Not available.
<b>Personal protective equipment (Pictograms)</b>	: Not available.

## 9. Physical and chemical properties

<b>Physical state</b>	: Liquid. [Compressed gas.]
<b>Flash point</b>	: Closed cup: -104.4°C (-155.9°F)
<b>Burning time</b>	: Not applicable.
<b>Burning rate</b>	: Not applicable.
<b>Auto-ignition temperature</b>	: Not available.
<b>Flammable limits</b>	: Not available.
<b>Color</b>	: Clear. Colorless.
<b>Odor</b>	: Characteristic.
<b>Taste</b>	: Not available.
<b>Molecular weight</b>	: Not applicable.
<b>Molecular formula</b>	: Not applicable.

## 9. Physical and chemical properties

<b>pH</b>	: 10 to 11
<b>Boiling/condensation point</b>	: Not available.
<b>Melting/freezing point</b>	: Not available.
<b>Critical temperature</b>	: Not available.
<b>Relative density</b>	: 0.964
<b>Vapor pressure</b>	: Not available.
<b>Vapor density</b>	: Not available.
<b>Volatility</b>	: Not available.
<b>Odor threshold</b>	: Not available.
<b>Evaporation rate</b>	: Not available.
<b>SADT</b>	: Not available.
<b>Viscosity</b>	: Not available.
<b>Ionicity (in water)</b>	: Not available.
<b>Dispersibility properties</b>	: Not available.
<b>Solubility</b>	: Easily soluble in the following materials: cold water and hot water.
<b>Physical/chemical properties comments</b>	: Not available.
<b><u>Aerosol product</u></b>	
<b>Type of aerosol</b>	: Spray
<b>Heat of combustion</b>	: 3.619 kJ/g

## 10. Stability and reactivity

<b>Chemical stability</b>	: The product is stable.
<b>Conditions to avoid</b>	: Avoid all possible sources of ignition (spark or flame).
<b>Incompatible materials</b>	: No specific data.
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.

## 11. Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-butoxyethanol	LC50 Inhalation Gas.	Rat	450 ppm	4 hours
	LD50 Dermal	Rabbit	220 mg/kg	-
	LD50 Oral	Rat	250 mg/kg	-
ethanol	LC50 Inhalation Vapor	Rat	124700 mg/m <sup>3</sup>	4 hours
	LD50 Oral	Rat	7 g/kg	-
butane	LC50 Inhalation Vapor	Rat	658000 mg/m <sup>3</sup>	4 hours

**Conclusion/Summary** : Not available.

### Chronic toxicity

Not available.

**Conclusion/Summary** : Not available.

### Irritation/Corrosion

## 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
2-butoxyethanol        ethanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Eyes - Severe irritant	Rabbit	-	500 milligrams	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-

**Conclusion/Summary** : Not available.

### Sensitizer

Not available.

**Conclusion/Summary** : Not available.

### Carcinogenicity

Not available.

**Conclusion/Summary** : Not available.

### Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
2-butoxyethanol	A3	3	-	-	-	-
ethanol	A3	1	-	-	-	-

### Mutagenicity

Not available.

**Conclusion/Summary** : Not available.

### Teratogenicity

Not available.

**Conclusion/Summary** : Not available.

### Reproductive toxicity

Not available.

**Conclusion/Summary** : Not available.

**Synergistic products** : Not available.



## 12. Ecological information

**Ecotoxicity** : No known significant effects or critical hazards.

### Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
2-butoxyethanol	Acute EC50 >1000 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 800000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 1250000 µg/l Marine water	Fish - Menidia beryllina	96 hours
ethanol	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks

**Conclusion/Summary** : Not available.

### Persistence/degradability

Not available.

**Conclusion/Summary** : Not available.

**Partition coefficient: n-octanol/water** : Not available.

**Bioconcentration factor** : Not available.

**Mobility** : Not available.

**Toxicity of the products of biodegradation** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## 13. Disposal considerations

**Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

**Waste stream** : Not available.

**RCRA classification** : Not available.







Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

## 14. Transport information



## 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
<b>DOT Classification</b>	1950	Aerosols	2.1	-		<b>Limited quantity</b> Yes.
<b>TDG Classification</b>	1950	Aerosols	2.1	-		<b>Explosive Limit and Limited Quantity Index</b> 5
<b>Mexico Classification</b>	1950	Aerosols	2.1	-		-
<b>ADR/RID Class</b>	1950	Aerosols	2	-		<b>Tunnel code</b> (D)
<b>IMDG Class</b>	1950	Aerosols	2.1	-		-
<b>IATA-DGR Class</b>	1950	Not available.	2.1	-		-

PG\* : Packing group

## 15. Regulatory information

**United States inventory (TSCA 8b)** : Not determined.

**WHMIS (Canada)** : Class A: Compressed gas.  
Class D-2B: Material causing other toxic effects (Toxic).

### Canadian lists

**Canadian NPRI** : The following components are listed: 2-Butoxyethanol; Ethanol; Propane; Butane (all isomers)

**CEPA Toxic substances** : The following components are listed: 2-butoxyethanol

**Canada inventory** : Not determined.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

### International regulations

**International lists** :

- Australia inventory (AICS)**: Not determined.
- China inventory (IECSC)**: Not determined.
- Japan inventory**: Not determined.
- Korea inventory**: Not determined.
- Malaysia Inventory (EHS Register)**: Not determined.
- New Zealand Inventory of Chemicals (NZIoC)**: Not determined.
- Philippines inventory (PICCS)**: Not determined.
- Taiwan inventory (CSNN)**: Not determined.

## 15. Regulatory information

Chemical Weapons : Not listed  
Convention List Schedule  
I Chemicals

Chemical Weapons : Not listed  
Convention List Schedule  
II Chemicals

Chemical Weapons : Not listed  
Convention List Schedule  
III Chemicals

## 16. Other information

**Label requirements** : HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

**Hazardous Material  
Information System (U.S.A.)** :

Health	*	2
Flammability		4
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

**References** : Not available.

**Other special  
considerations** : Not available.

**Date of printing** : 6/2/2015.

**Date of issue** : 6/2/2015.

**Date of previous issue** : 4/20/2015.

**Version** : 1

**Prepared by** : Not available.

Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.